

AMENDMENT

IN THE CLAIMS:

1. (CURRENTLY AMENDED) A vapor compression system comprising:
 - a compression device to compress a refrigerant to a high pressure, said compression device including a discharge;
 - a heat rejecting heat exchanger for cooling said refrigerant;
 - an expansion device for reducing said refrigerant to a low pressure, said expansion device including an inlet;
 - a heat accepting heat exchanger for evaporating said refrigerant;
 - a refrigerant line bypassing said heat rejecting heat exchanger between said discharge of said compression device and said inlet of said expansion device, wherein said refrigerant in said refrigerant line flows directly from said discharge of said compression device and into said inlet of said expansion device;
 - a valve located on said refrigerant line to control a flow of said refrigerant between said discharge of said compression device and said inlet of said expansion device;
 - a sensor that detects a defrosting condition of said heat accepting heat exchanger; and
 - a control that opens said valve when said sensor detects said defrosting condition to allow said refrigerant to flow through said valve.
2. (PREVIOUSLY PRESENTED) The system as recited in claim 6 wherein said fluid is water.
3. (CANCELLED)
4. (PREVIOUSLY PRESENTED) The system as recited in claim 1 wherein said refrigerant from said compression device bypasses said heat rejecting heat exchanger, flows through said valve, flows through said expansion device, and flows through heat accepting heat exchanger to melt frost on said heat accepting heat exchanger when said valve is open.

5. (PREVIOUSLY PRESENTED) The system as recited in claim 1 wherein said control closes said valve when said sensor does not detect said defrosting condition to prevent said refrigerant from flowing through said valve.
6. (PREVIOUSLY PRESENTED) The system as recited in claim 1 further including a pump that draws a fluid through said heat rejecting heat exchanger, and said fluid exchanges heat with said refrigerant flowing through said heat rejecting heat exchanger.
7. (PREVIOUSLY PRESENTED) The system as recited in claim 6 wherein said control deactivates said pump to stop said fluid from flowing through said heat rejecting heat exchanger when said control opens said valve to allow said refrigerant to flow through said valve.
8. (ORIGINAL) The system as recited in claim 1 wherein said refrigerant is carbon dioxide.
9. (PREVIOUSLY PRESENTED) The system as recited in claim 1 further including a second valve positioned between said discharge of said compression device and said heat rejecting heat exchanger, and said control closes said second valve when said sensor detects said defrosting condition to prevent said refrigerant from flowing through said second valve.
10. (PREVIOUSLY PRESENTED) The system as recited in claim 1 further including a second valve positioned between said gas cooler and said inlet of said expansion device, and said control closes said second valve when said sensor detects said defrosting condition to prevent said refrigerant from flowing through said second valve.

11. (PREVIOUSLY PRESENTED) The system as recited in claim 1 wherein said valve includes a first port in fluid communication with said discharge of said compression device, a second port in fluid communication with said heat rejecting heat exchanger, and a third port in fluid communication with said inlet of said expansion device, and said control closes said second port to prevent said refrigerant from said compression device from flowing through said heat rejecting heat exchanger and opens said third port to allow said refrigerant from said compression device to flow through said expansion device along said refrigerant line when said sensor detects said defrosting condition and said control opens said second port to allow said refrigerant from said compression device to flow through said heat rejecting heat exchanger and closes said third port to prevent said refrigerant from said compression device from flowing through said expansion device along said refrigerant line when said sensor does not detect said defrosting condition.

12. (PREVIOUSLY PRESENTED) A vapor compression system comprising:
 - a compression device to compress a refrigerant to a high pressure, said compression device including a discharge;
 - a heat rejecting heat exchanger for cooling said refrigerant;
 - an expansion device for reducing said refrigerant to a low pressure, said expansion device including an inlet;
 - a heat accepting heat exchanger for evaporating said refrigerant;
 - a refrigerant line bypassing said heat rejecting heat exchanger between said discharge of said compression device and said inlet of said expansion device;
 - a valve located on said refrigerant line to control a flow of refrigerant between said discharge of said compression device and said inlet of said expansion device, wherein said valve includes a first port in fluid communication with said inlet of said expansion device, a second port in fluid communication with said heat rejecting heat exchanger, and a third port in fluid communication with said discharge of said compression device, and said control closes said second port to prevent said refrigerant from said heat rejecting heat exchanger from flowing through said expansion device and opens said third port to allow said refrigerant from said compression device to flow through said expansion device along said refrigerant line when said sensor detects said defrosting condition and said control opens said second port to allow said refrigerant from said heat rejecting heat exchanger to flow through said expansion device and closes said third port to prevent said refrigerant from said compression device from flowing through said expansion device along said refrigerant line when said sensor does not detect said defrosting condition;
 - a sensor that detects a defrosting condition of said heat accepting heat exchanger; and
 - a control that opens said valve when said sensor detects said defrosting condition to allow said refrigerant to flow through said valve.

13. (PREVIOUSLY PRESENTED) The system as recited in claim 1 wherein said expansion device includes an orifice, and said orifice is adjusted to control one of an inlet temperature of said refrigerant entering said heat rejecting heat exchanger, a power of said compression device, and said high pressure of said system.

14-17. (CANCELLED)

18. (CURRENTLY AMENDED) A method of regulating a high pressure of a transcritical vapor compression system comprising the steps of:

compressing a refrigerant to the high pressure in a compression device including a discharge;

cooling the refrigerant by exchanging heat with a fluid, and the fluid accepts heat from the refrigerant;

expanding the refrigerant to a low pressure in an expansion device including inlet;

evaporating the refrigerant in a heat accepting heat exchanger;

sensing a defrosting condition of the heat accepting heat exchanger;

directly flowing the refrigerant along a refrigerant line from the discharge of the compression device to the inlet of the expansion device; and

melting frost on the heat accepting heat exchanger when the step of sensing the defrosting condition indicates the defrosting condition is necessary.

19. (PREVIOUSLY PRESENTED) The method as recited in claim 18 further including the steps of sensing no frost on the heat accepting heat exchanger and blocking the flow of refrigerant from the compression device to the expansion device.

20. (PREVIOUSLY PRESENTED) The method as recited in claim 18 wherein the refrigerant is carbon dioxide.

21. (NEW) The system as recited in claim 1 wherein said defrosting condition is frost.

22. (NEW) The system as recited in claim 1 wherein said refrigerant in said refrigerant line bypasses an accumulator located between said heat accepting heat exchanger and said compression device.
23. (NEW) The system as recited in claim 1 wherein said refrigerant in said heat accepting heat exchanger exchanges heat with air.
24. (NEW) The system as recited in claim 1 wherein said refrigerant in said refrigerant line does not exchange heat in any component when directly flowing along said refrigerant line from said discharge of the compression device and into said inlet of said expansion device.
25. (NEW) The method as recited in claim 18 wherein the step of directly flowing said refrigerant along the refrigerant line flows said refrigerant around an accumulator located between the heat accepting heat exchanger and the compression device.
26. (NEW) The method as recited in claim 18 wherein the step of directly flowing said refrigerant along said refrigerant line does not exchange heat in any component when directly flowing along the refrigerant line from the discharge of the compression device and into said inlet of said expansion device.